



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/732,818	12/11/2003	Regis Lardennois	P08130US00/RFH	5884

881 7590 12/21/2005

STITES & HARBISON PLLC
1199 NORTH FAIRFAX STREET
SUITE 900
ALEXANDRIA, VA 22314

EXAMINER

HERRERA, DIEGO D

ART UNIT PAPER NUMBER

2683

DATE MAILED: 12/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/732,818

Applicant(s)

LARDENNOIS ET AL.

Examiner

Diego Herrera

Art Unit

2683

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

Claimed Objections

Applicant has amended claim 6 and most of the other objections and informalities referred to by the examiner. Therefore, the examiner has decided to withdraw the claim 6 objection and all the informalities and objections made. Thank you for being cooperative for making these changes.

Response to Arguments

Applicant's arguments filed **12/11/2005** have been fully considered but they are not persuasive.

In response to the applicants arguments concerning claims 1-8, the applicants features in the claims wherein a cellular system transmits by radio between an infrastructure and mobile devices that travel on a set path, the infrastructure comprising stationary transceiver stations along the set path and allocated in successive cells, and each of the mobiles having transceivers. The relation between the mobile devices and the transceivers of the stationary stations is that of the following: while a mobile is in a given cell, exchanges take place between the mobile and the transceivers allocated to the cell take place in alternation during two successive radio cycles and in two different frequencies, reads on Maki in view of Andersson.

Maki is disclosing a cellular system, wherein transmissions of information are done through radio transmission channels as discussed between an infrastructure and mobiles set on a determined path. Maki continues by showing multiple base stations with transceivers set up in successive cells along the determined set path, mobiles also having such equipment installed and being able to communicate with the base stations

transceivers. Maki also discloses the set up of timeslots wherein each time slot there are four cycles where transmissions alternating upload and download in one frequency in four successive cycles within one time frame within a cell with at least one transceiver in sight of the mobile devices take place. Maki did not specifically show two different frequencies alternating with information, however the limitation is broad, and reads upon the secondary reference Andersson, where Andersson discloses that it would be obvious to one skilled in the art to show that in such event the frequencies are able to transmit information between a mobile moving where transceivers are available to communicate with said mobile transceiver in two different frequencies within a cell, and when entering a new cell is able to handoff and perform the same said process of communication.

In response to the applicants argument, from page 4, as discussed above Maki does show more than two alternating exchanges between the mobile device and the transceiver in a time frame of four cycles; downlink representing information being downloaded from transceiver to the mobile device and then uplink representing information being uploaded from mobile device to the transceiver, and this is done within a cell to a base station with a transceiver on both the mobile devices and the transceivers; however, Maki only uses one frequency to perform the communication relationship between the mobile device and the transceiver for the purpose of not congesting the airways with signals. Nonetheless, the secondary reference, Andersson, teaches two frequencies can be used to upload and download information from a transceiver to a mobile device and vice versa.

The combination does apply to this application and in reference to the first independent claim, the features are shown via the primary and secondary references cited in the action, and as modified by both Maki et al. and Andersson et al. show motivations and can be used because they are in the same field and teaching nearly identical systems.

Regarding the dependent claims, the features are shown via the other references cited in the action, and as modified by Maki, Andersson, Anderson, Lardennois, and Kojima show motivations and can be used because they are in the same field and teaching nearly identical systems.

Therefore, the argued features are written broad such that they read upon the cited references or are claiming the same limitations as the cited references.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

a. A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-3 rejected under 35 U.S.C. 103(a) as being unpatentable over Maki et al. (U.S. patent #: 5,901,144) in view of Andersson et al. (U.S. patent #: 5,530,917).

Regarding claim 1, Maki et al. discloses a cellular system (**FIG. 4**) for transmitting information by radio (Abstract "accommodating a plurality of mobile stations through **radio transmission channels**") between and infrastructure and mobiles constrained to travel on a determined path, the infrastructure comprising stationary transceiver stations (**FIG. 4, base stations (400a)-(400c)**) distributed along the path and allocated to successive cells, and each mobile carrying a transceiver (**FIG. 4, col. 2, lines: 47- 49, note: transceiver is an inherent part of a mobile station**), the transceivers of the stationary stations and the transceiver carried by each mobile are controlled in such a manner that, while a mobile is in a given cell, exchanges between the mobile and the

transceivers allocated to the cell take place in alternation during two successive radio cycles (**FIG. 4, note: downlinks and uplinks of one T period between t0 to t1 then a successive downlinks and uplinks of one T period between t1 to t2).**

However, Maki et al. does not specifically disclose two different frequencies.

In the same field of endeavor, Andersson et al. clearly shows and discloses two different frequencies (**FIG. 1b (c1) and (k1), col. 4, lines: 66, 67, col. 5, lines: 1-4).**

Therefore, it would have obvious to a person or ordinary skill in the art at the time of the invention was made to incorporate two frequencies taught by Andersson et al. for communicating between the base station and the mobile station in a given cell taught by Maki et al. for the purpose of avoiding interference signals for better performance (**as disclosed by Andersson et al. col. 5, lines: 29-32, “an attempt is made to avoid these interference signals by allocating well-separated frequencies to neighboring cells”).**

Regarding claim 2, and as applied to claim 1 above, as modified by Andersson, Maki et al. shows and discloses each cycle constituted by a plurality of short exchange frames (**FIG. 4, col. 8, lines: 20-31, note: each cycle, denoted by ‘T’, is constituted by a plurality of short exchange frames, that are denoted by squares called slots by Maki et al.).**

Regarding claim 3, and as applied to claim 1 above, as modified by Andersson, Maki shows using a time division multiple access mode of transmission (**FIG. 4,col. 3, line 30, “slot position” and “time-division multiplexed (TDMA) channel slots”).**

2. Claim 4 rejected under 35 U.S.C. 103(a) as being unpatentable over Maki et al. (**U.S. patent #: 5,901,144**) in view of Andersson et al. (**U.S. patent #: 5,530,917**) and further in view of Delprat et al. (**U.S. patent #: 5,617,412**).

Regarding claim 4, Maki et al. and Andersson et al. disclose the claimed invention as applied to claim 1 above; however, they do not disclose frames containing essential information always transmitted on two frequencies in succession.

However, Delprat et al. discloses frames containing essential information always transmitted on two frequencies in succession (**col. 5, lines: 2-8, note that it is inherent that 'essential information' is being transmitted**).

Therefore, it would have obvious to a person or ordinary skill in the art at the time of the invention was made to modify the system Maki/Andersson for having frames containing essential information always transmitted on two frequencies in succession by adding Delprat for the purpose of effective communication of information with out the loss of essential frames of data (**col. 5, lines: 2-10, note it is by inherency that 'essential information' will be transmitted**).

3. Claim 5 rejected under 35 U.S.C. 103(a) as being unpatentable over Maki et al. (**U.S. patent #: 5,901,144**) in view of Andersson et al. (**U.S. patent #: 5,530,917**) and further in view of Anderson et al. (**U.S. patent #: 6,094,575**).

Regarding claim 5, Maki et al. and Andersson et al. disclose the claimed invention as applied to claim 1 above; however, they do not disclose a pair of frequencies used in a cell that is constituted by two frequencies that are different from the frequencies used in the adjacent cells.

However, Anderson et al. discloses a pair of frequencies used in a cell that is constituted by two frequencies that are different from the frequencies used in the adjacent cells (**col.6, lines: 31-39**).

Therefore, it would have obvious to a person or ordinary skill in the art at the time of the invention was made to modify the system Maki/Andersson to include a pair of frequencies used in a cell that is constituted by two frequencies that are different from the frequencies used in the adjacent cells by adding Anderson for the purpose of minimizing the interference between adjacent cells (**col. 6, lines: 38-39**).

4. Claim 6 rejected under 35 U.S.C. 103(a) as being unpatentable over Maki et al. (**U.S. patent #: 5,901,144**) in view of Andersson et al. (**U.S. patent #: 5,530,917**) and further in view of Kojima et al. (**U.S. patent #: 5,323,446**).

Regarding claim 6, Maki et al. and Andersson et al. disclose the claimed invention as applied to claim 1 above; however, they do not disclose a protocol for allocating time slots when entering a cell by a base station in response to sending an entry identification to the base station.

However, Kojima et al. discloses TDMA (**col. 2, line: 5**) and a protocol for allocating time slots (**col. 2, lines: 6-12**) when entering a cell by a base station in response to sending an entry identification (**Fig. 1, note the base station areas (30₁-30_n) are being interpreted as the cell areas, note that the word 'threshold' is interpreted by examiner as 'entry identification', Abstract: "a threshold to determine whether a handoff is to be performed to a second, adjacent base station (cell)."**) to the base station.

Therefore, it would have obvious to a person or ordinary skill in the art at the time of the invention was made to modify the system Maki/Andersson by having TDMA and a protocol for allocating time slots when entering a cell by a base station in response to sending an entry identification by adding Kojima for the purpose of access to the wayside base station to start or continue communication in a remote way (**col. 2, lines: 18-25**).

5. Claim 7 rejected under 35 U.S.C. 103(a) as being unpatentable over Maki et al. (**U.S. patent #: 5,901,144**) in view of Andersson et al. (**U.S. patent #: 5,530,917**) and further in view of Kojima et al. (**U.S. patent #: 5,323,446**) as applied to claim 6 above and further in view of Bruckert et al. (**U.S. patent #: 5,548,808**).

Regarding claim 7, the combination Maki/Andersson/Kojima disclosed a system according to claims 1 and 6:

The combination Maki/Andersson/Kojima does not disclose an exit from a cell is detected by a repeated failure of a response to a request made by the base station.

Bruckert discloses an exit from a cell that is detected by a repeated failure of a response to a request made by the base station (**Abstract: "the power of a first signal is measured and is compared with a threshold...if the first or second signal (up and down link) fails to meet the handoff threshold, the first or second, respectively, will discontinue serving the subscriber."** note threshold request and the lack of response will determine the end of information being transmitted by a cell to a mobile unit, this is interpreted by the examiner to mean 'the exit'.)

Therefore, it would have obvious to a person or ordinary skill in the art at the time of the invention was made to modify the system Maki/Andersson/Kojima to have an exit from a cell that is detected by a repeated failure of a response to a request made by the base station by adding Bruckert for the purpose of completing transaction of information between the cell and mobile thus avoiding poor quality of signal range and quality of information (**Abstract: 'will discontinue serving the subscriber'**).

6. Claim 8 rejected under 35 U.S.C. 103(a) as being unpatentable over Maki et al. (**U.S. patent #: 5,901,144**) in view of Andersson et al. (**U.S. patent #: 5,530,917**) as applied to claim 1 and further in view of Lardennois (**U.S. patent #: 5,995,845**).

Regarding claim 8, the combination of Maki/Andersson disclosed a system according to claim 1:

The combination Maki/Andersson does not disclose, the train has two car radio units, one placed at the front and the other placed at the back, and designed to enable the two units to be handed over from one cell to another independently and in succession.

Lardennois discloses the train has two car radio units, one placed at the front and the other placed at the front and the other placed at the back, and designed to enable the two units to be handed over from one cell to another independently and in succession (**col. 2, lines 4-10**).

Therefore, it would have obvious to a person or ordinary skill in the art at the time of the invention was made to modify the system Maki/Andersson for the train to have two car radio units, one placed at the front and the other placed at the placed at the

back, and designed to enable the two units to be handed over from one cell to another independently and in succession by adding Lardennois for the purpose of tolerating possible failure of one the transmitter/receiver (**col. 2, lines: 18-25**).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Diego Herrera whose telephone number is (571) 272-0907. The examiner can normally be reached on Monday-Friday, 7AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William G. Trost can be reached on (571) 272-7872. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

D.H.



NICK CORSARO
PRIMARY EXAMINER